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LEUCOCYTES.

Can they be developed spontaneously in Blastemata? Origin of Leucocytes found in the midst of Blastemata primarily amorphous, isolated in permeable receptacles. *By* M. LORTET, M.D., S.D.

TRANSLATED EXPRESSLY FOR THIS JOURNAL, BY WALTER HAY, M.D., ASSOCIATE EDITOR.

THERE are presented to us, at this time, two theories to explain the genesis of anatomical elements. The one assumes as its fundamental doctrine, that cell originates directly from cell; the other, on the contrary, admits that certain organized anatomical elements may originate spontaneously in amorphous blastemata, by and out of expense of the latter. If it were once thoroughly demonstrated that an organism as characteristic as the leucocyte, for example, could originate spontaneously in the midst of a liquid placed under certain particular conditions, this would certainly be a very important conquest by the defenders of the theory of generative blastemata. It is this especial point, moreover, already investigated by several physiologists, which constitutes the subject of this paper. In 1867, M. Onimus published, in the *Journal of Anatomy and Physiology* of Professor Robin, a memoir enti-

tled: "*Experiments upon the genesis of Leucocytes.*" The author affirms that in certain blastemata, entirely free from organized elements, enclosed in receptacles composed of organic membranes, and placed in the interior of wounds effected in animals, after a short interval of time, there are produced spontaneously leucocytes, well organized, and in great numbers. M. Onimus introduces, under the skin of rabbits, little sacs of gold-beaters' leaf, filled with the serosity from fresh blisters. Twelve hours afterward, the serosity is found still transparent, although it has lost its primitive yellow color: already several leucocytes and granulations may be observed. At the end of twenty-four hours, the serosity contains many granulations and leucocytes; after thirty-six hours, it is entirely white, and is composed solely of leucocytes and granulations. Moreover, M. Onimus asserts that, in order that the genesis of leucocytes should occur, it is necessary that the fibrine be not coagulated; for, according to him, neither leucocytes nor any other species of anatomical elements are formed in the serosity of a blister whose fibrine has been precipitated by coagulation. We shall perceive, later, how little the facts which we have observed harmonize with this opinion. From these different experiments M. Onimus deduces the spontaneous generation of leucocytes in fibrinous blastemata placed under peculiar conditions of temperature and of endosmosis.

These experiments are too important to pass by unnoticed; but already the investigations of M. Cohnheim (of Berlin) upon inflammation have enabled us to perceive that M. Onimus has been deceived, not only in his facts, but in the explanation which he gives of them. According to M. Cohnheim, in certain inflammations, leucocytes are not always the result of the proliferation of the nuclei of connective tissue. Frequently they are nothing else than those of the blood which have passed through the capillary walls. This phenomenon is easy to establish; if, in a frog poisoned by curare, the mesentery, irritated simply by contact with the air, be examined microscopically, leucocytes are seen to pass

slowly out of the vessels which contain them. So, also, in an inflamed tissue the vascular parietes become fitted to permit the passage of these little organisms, which does not occur in a physiological condition. The leucocytes are elongated, drawn out, bent, changed in form at every instant, just as true amæbæ, which they appear to be, and finish by means of these movements, by penetrating into the fabric of the tissues. In order that this phenomenon may be accomplished, it is necessary that these organisms should be living, or, rather, that they should be found in certain conditions of life, of temperature, and of medium, as we shall, in a moment, perceive.

On the other hand, the results of the experiments published by M. Chauveau in his investigations into the mode of penetration of virulent corpuscles into the organism—results demonstrating that leucocytes are introduced by myriads through membranes plunged into a medium loaded with leucocytes, might cast a doubt upon the truth of the theory of M. Onimus, for the capital importance of the fact affirmed by this physiologist, that is to say, the spontaneous generation in certain blastemata of bodies as highly organized as leucocytes, deserved, indeed, the most serious study. Moreover, in spite of the clearness of the differential results published by this author, according to the nature of the blastema introduced into the receptacles, we have considered it necessary to repeat those experiments, placing ourselves for that purpose in conditions free from any objection.

We have especially experimented with blastemata which we could be assured was a non-fibrinous liquid, and primarily entirely free from leucocytes. The animals upon which wounds were established for the purpose of experiment, were invariably horses and asses; the receptacles destined to contain the blastemata were either pouches made of gold-beaters' skin or the swimming bladders of finches or carps. Membranes which are almost purely fibrous, and whose walls contain no nuclei or cellules which could be confounded with leucocytes. The liquids, which we have placed in these organic vesicles, were,

1st. Pure egg-albumen, which contains only some filamentous traces, and a few vitelline cells.

2nd. Cerebro-spinal fluid, freshly taken from the horse. This liquid, examined carefully with the microscope, shows only a few scattered granules. By chemical tests, very little albumen could be detected.

3rd. Solutions of non-azotized substances, such as gum acacia and sugar. These solutions were carefully examined and exhibited nothing which could be mistaken for leucocytes.

4th. Distilled water.

5th. Bladders, filled with atmosphere only, have been introduced into the wounds.

Receptacles filled with these different liquids were placed in the interior of subcutaneous incisions, freshly made, in the flanks of horses or asses, and left, ordinarily, for twenty-four hours undisturbed. The bladders filled with albumen contained, after twelve hours, a very great number of leucocytes. After twenty-four hours the liquid was entirely purulent. The leucocytes were extremely numerous, large and well-preserved.

With the cerebro-spinal fluid there was the same result; complete purulence at the end of twenty-four hours. Many granulations. This liquid appeared to preserve admirably the leucocytes, which maintained, for a long time, all their typical characteristics.

With the solutions of gum acacia and of sugar, complete purulence after twenty-four hours. The leucocytes were likewise well preserved, but agglutinated amongst themselves into large patches.

With the distilled water, the same result. The liquid had become albuminous by endosmosis. The leucocytes were large and swollen, and their nuclei were very perceptible. Granulations were numerous.

Finally, when the receptacles are distended only with atmospheric air, the leucocytes penetrate as well into their interior. It is necessary, however, to be careful that the internal pressure be not too strong, otherwise the phenomena

of penetration are effected with difficulty. These receptacles of air are not filled up entirely, but exhibit only a few drops of pus in their interior, and their membranous walls are, in a manner, stuffed with leucocytes. The swimming bladders of fishes are especially favorable for the establishment of this last fact. They are entirely fibrous, and the fibres which compose them are extremely translucid. Indeed, after remaining twelve hours only in a bleeding wound, there may be seen, upon these bladders, large patches, broad, whitish zones of a milky whiteness, truly purulent. With the aid of the microscope there may be recognized, without difficulty, long lines of leucocytes, ranged one against the other, which are effecting a passage for themselves through the fibres of the tissue as if by violence. When the wound is entirely fresh, when it is very bloody, the receptacles contain, with the leucocytes, hæmatine in sometimes insufficiently large quantity to impart to the liquid contents a bright rose color. The hæmatine must originate from the destruction of a certain number of sanguineous globules; but never have we been able to perceive a single red globule penetrate into the interior of the receptacles.

The pressure exercised by the lips of the wound upon the liquid in which the receptacle is bathed, has evidently no influence upon the penetration of leucocytes. It is easy to relieve these receptacles of this compression by enclosing them in tubes of glass with two ends. In spite of this precaution, these little organisms no less freely introduce themselves into the receptacular cavity.

It is evident that pressure exercised upon the pus of the wound does not enter at all in the production of these phenomena of penetration. In order to be convinced of this, take the swimming bladder of a fish; evert it in such a manner that the internal surface becomes the external, fill it with pus and attach it firmly to one of the extremities of a U shaped tube, into the larger branch of which gently pour some mercury. With this apparatus it may be established that even under the pressure of nineteen centimetres of mercury, maintained

during twenty-four hours continuously, not a single leucocyte traverses the membranous pouch. Under augmented pressure the pouches are ruptured, but the purulent globules do not pass out. In order that this penetration might take place, it is evidently necessary that the leucocytes be found in certain conditions of temperature and of vitality. Thus, when the pouches are plunged into an old wound in which there is only creamy, old, and probably altered pus, very few leucocytes are found in their interior, although a small number may always be detected. In this case, however, the phenomena of endosmosis are effected equally well, since distilled water, placed in similar conditions, becomes strongly albuminous. And here is a circumstance extremely important to note, that the more recent and bloody the wound, the more rapid is the penetration, and the more numerous the leucocytes in the pouch.

From the preceding experiments the following conclusions may be deduced :

1st. In an amorphous blastema, enclosed in a permeable pouch, and placed under determinate conditions of osmosis and of temperature, then introduced into a purulent or sanguineous medium, there is no spontaneous generation of leucocytes, but these little organisms pass between the fibres of the membranes, in consequence of the facility with which they can change their form.

2nd. Pressure has no influence upon this penetration.

3rd. The character of the liquid contained within the pouches is altogether a matter of indifference.

4th. It is necessary, in order that the leucocytes may penetrate the membranes, that they be endowed with movements, (Sarcodigma), and that they should be placed in determinate conditions of temperature and vitality.

5th. Leucocytes contained in a recent and bloody wound, penetrate much more rapidly, and in much greater number, than those in an old and purulent wound.

M. Ranvier has made a certain number of experiments which come to the aid of the conclusions of M. Lortet. He

placed fragments of the pith of the elder tree under the skin of a certain number of animals, and has determined that leucocytes would penetrate into the interior of this pith from the periphery to the centre. M. Ranvier does not believe in the spontaneous organization of blastemata, but it must be noted that the experiments of M. Lortet, and his own, demonstrate only the facility with which leucocytes can penetrate certain tissue; they prove nothing against spontaneous generation in blastemata.

M. Legros has repeated, finally, the experiments of M. Onimus. He used sacks of gold-beaters' leaf, which had been previously tested under water by insufflation, and which appeared perfectly impermeable. He, moreover, made the experiment with dialyzing paper, and in every case obtained the same result as M. Onimus. He, therefore, believes in the spontaneous generation of leucocytes in blastemata, and asserts that the importance of the amæbori movements have been exaggerated. M. Cornil has been able to assure himself that the substances employed in these experiments, such as gold-beaters' leaf, dialyzing paper, etc., are impermeable only during the first hours of their detention in the liquid. At the end of a certain time they soften and become permeable. If they are examined with the microscope, there are invariably found in them openings, more or less extensive. By permitting a sack of gold-beaters' leaf to remain distended in a vessel filled with pus, the latter speedily insinuates itself through the membrane into the interior of the sack. M. Lortet has stated that, in his experiments, he took great precautions in order that the pouches used by him should be perfectly closed. He thinks, therefore, that in those cases especially on which he used the swimming bladders of fishes, the leucocytes insinuated themselves between the fibres of these bladders, in consequence of their amaboid properties, and by means of microscopic investigations of their walls, he has always been able to recognize lines of white globules passing from the external to the internal surface.

M. Hayem observes that, in the experiments undertaken

by M. Onimus and Legros, objection ought be made, not only to the receptacles, but also to the liquid considered as blastema. Indeed, M. Onimus asserts that the condition essential to the success of the experiment consists in the non-coagulation of the serosity. Now, M. Valpian assures us that the serum collected in the vesicles of blisters prevents constantly, at the end of about ten minutes, a fibrinous coagulation.

Moreover, the infiltration of the serum does not retain certainly all the white globules. It is well known that these can pass through a paper filter. There is therefore introduced into the gold-beater's leaf, not only a pretended blastema having already furnished a clot, but, in addition, a liquid containing, perhaps, a certain number of white globules. Moreover, M. Hayem believes, likewise, in the easy penetration of the gold-beater's leaf by the white globules; so that, in his opinion, the contents and the containing membrane are equally inappropriate for the demonstration of the fact which has been advanced.

M. Legros asserts that the serum of blisters coagulates only in a certain number of cases. He adds that the presence of leucocytes in the interior of membranes can be interpreted in a manner totally different from that proposed by M. Lortet.

MODERN TREATMENT OF ACUTE INTERNAL INFLAMMATIONS.

Extract from the annual address delivered before the Medical Society of the State of North Carolina, at its Fifteenth Annual Meeting, held at Warrenton, May 20th, 1868.

BY WM. A. B. NORCOM, M.D., OF EDENTON, N. C.

NOTHING so thoroughly arms a physician for his contest with disease, as a knowledge of its natural history, that he may be prepared to imitate and assist the curative changes

nature so constantly strives to effect. Our remedies can only avail in so far as they aid natural operations.

In a lecture delivered by Sir Wm. Fergusson,* at the Royal College of Surgeons of England, in June, 1865, I find the following:

"The loss of confidence in much-vaunted remedies seems, in some respects, like a loss or diminution in our appliances—an abstraction from our powers, as it were. But in my opinion the correct view to take here is, that we are acquiring a knowledge of our own ignorance — that we are beginning to see that we have placed our faith erroneously. In short, that we have been taking honor to ourselves for that which has been justly due to nature. We begin to see the difference between blind empiricism and natural processes."

Says Anstie,† on this point: "Without an observation of natural processes no medical man ever did great things for mankind, or for the advance of his art." * * * * "It was but yesterday that disease was universally regarded as some thing entirely foreign to the vital organism, which came to it from without, resided in it for a time, and then departed, exorcised by the physician's art. To-day we are inclined to take a less exalted view of our functions, to confess ourselves to be but the humble assistants in those curative processes which Nature herself initiates, and very often carries through without our help, or even in spite of our ignorant interference. Together with such changed ideas, there must come a revolution in our modes of therapeutical inquiry; and notably, a disposition to compare those instances of the beneficial action of drugs which are well authenticated, with similar effects *produced by the unaided operation of natural causes.* And it is surely lawful to hope that even partial success in this direction, may prove more advantageous to the progress of our art, than the most brilliant reasoning which should presuppose the physician's power to effect radical

* Richmond Medical Journal, vol. 1, page 37.

† Stimulants and Narcotics — Anstie.

alterations in the working of the vital agencies, whose operations we are only just beginning dimly and partially to understand."

And says Prof. P. Hughes Bennett:* "If every young practitioner would dedicate his life to the careful elucidation of the natural progress of only one disease, he would do more for medical practice than has been accomplished by centuries of empirical trials of remedies."

And Dr. Todd,† one of the brightest medical lights England ever produced, remarks thus: "Internal inflammations are cured, not by the ingesta administered, nor by the egesta promoted by the drugs of the physician, but by a natural process as distinct and definite as that process itself of abnormal nutrition to which we give the name of inflammation. Our interference either may aid, promote, and even accelerate this natural tendency to get well; or it may very seriously impair and retard, and even altogether stop, that salutary process."

Prof. T. Gaillard Thomas,‡ in a lecture to his class, in speaking of the natural history of disease, says: "Remain ignorant of it, and you shut the gates of the avenue which leads to progress in Medicine; master it, and your therapeutic knowledge will become certain, and its application a science." He further says, in the same lecture, as the result of experience: "If fifty cases of pleurisy (the disease for which Sydenham prescribed so vigorously) be placed in bed, carefully nursed, dieted, guarded from deleterious influences, and receive not a particle of medicine of any kind, the probabilities are that not one case would end fatally; all would likely recover, unless some peculiarity of constitution, the unfavorable age of the person, or accidental complication should alter the result."

How very liable we are to be deceived in regard to the power and efficacy of drugs! Suppose in these fifty cases of

* Bennett's Practice.'

† Clinical Lectures — by Beale.

‡ Richmond Medical Journal, vol. 1.

pleurisy, some harmless medicine had been given! It might have been proclaimed as a specific. Or, suppose mercury, so frequently given by many physicians in this disease, had been administered to these patients, they may all still have recovered, but certainly not so quickly, nor so well as under the conditions mentioned by Dr. Thomas.

And, says the popular and accomplished professor of Physiology, Hygiene and General Pathology in the University of Maryland:* "Now we substitute for the old compound prescriptions, simple remedies, given with a definite object, always recognizing the true position of nature as the curer, and medicine as her handmaid and assistant — laying great stress upon the observance of hygienic and sanitary laws."

Dr. Garrod† tells us that he has seen many cases of severe rheumatic fever get rapidly well without the use of drugs, and that on simply colored or camphor water the improvement is often very quick and decided. In the Guy's Hospital Reports for 1865,‡ are forty-one cases of rheumatic fever, thirty-seven treated by Dr. Gull, and four by Dr. G. O. Rees, "scarcely any medicine except mint water being given." Twenty-two were males, nineteen females; two only above the age of forty, the rest under thirty-five. The heart is mentioned as implicated in a large number of them. The average number of days from admission into hospital to complete convalescence was, for the males, sixteen, females twenty-one. The average duration of the acute symptoms in seven cases in which there was no evidence of the heart being involved, was eight days; in six cases in which the heart was decidedly affected, twenty-three days. From these cases what other inference can be drawn, except that mint water is a wonderful remedy for rheumatism, or that nature frequently triumphs over the disease? As mint water is known to be inert, we must accept the latter. Such facts as these should teach us a wholesome lesson. Suppose these cases had been salivated! Modern authors tell us that salivation neither

* Valedictory Lecture, delivered March 9th, 1867 — by Prof. Donaldson.
† Reynold's Essays of Medicine, vol. 1. ‡ Op. Cit.

shortens the duration of the disease, nor prevents cardiac complications. Then why practice it when, to say the least, the convalescence would necessarily be prolonged by the patient having to get well of the treatment as well as the disease? I mention this treatment particularly because I know that by many mercury is considered the "heroic" remedy in this as well as all other acute diseases.

By the foregoing remarks, I would not be understood to advise doing nothing for rheumatism; but we might learn the lesson to be careful in the use of powerful drugs, when the unaided powers of nature frequently effect a cure. In this disease, the alkaline treatment has proved highly successful.

A short time since, a lady of great intelligence told me that a few years ago she was treated for a pneumonia, the basis of which was *verat. viride* and low diet. Her medical attendant, a highly respectable physician, told her his object was to nauseate her to reduce her fever, which he very effectually did. She became cold, clammy, and almost pulseless. Active stimulation had to be resorted to, to save her from immediate death. She, however, finally recovered after a very tedious convalescence of six or eight weeks.

From an authentic source I heard of a case that occurred within a few years past, of bilious fever, which was terribly salivated. So offensive was the odor caused by the mortification consequent upon such ignorance and brutality, that one could not remain long in the room without sitting by a raised window. Yet this patient recovered, also, and was assured by the doctor that he would not have produced such a state of things, had it not been "necessary to save life."

Who can say that these remedies aided those patients to get well? A faithful report of the *convalescence* of such cases would be most interesting and instructive. Do not such recoveries, gentlemen, furnish a crowning demonstration of the great fact that Nature often triumphs over the doctor, and his treat ment, too? What wonderful wisdom and goodness is displayed by the Almighty in permitting this to be so! If

those only recovered who were properly treated, the inhabitants of this earth would grow less almost as rapidly as by a fiercely waged universal war. Call it what you may, the "*vis medicatrix naturæ*," or, as Dr. Dickson says, life itself, there is a resistive force—an inherent curative power—that frequently thwarts, in the language of Dr. Thomas, "the machinations of misguided men."

Dr. Forget says* that "Nature is stronger than physic and physicians; for if she were the slave of systems, the world would soon be a desert."

It is only by a careful and faithful study of her laws that we can hope to render to our patients that rational and effective aid, which it should always be the aim of the honest and conscientious votaries of our Heaven-born Art to give!

But let us pass on to alimentation. It has always seemed strange to me that nutritious food, so essential to maintain the organism in its integrity, should ever have been withheld in disease, at which time it is now proved to be so indispensable. When Nature is struggling to effect certain objects, which can not be effected by art alone, and without which recovery could not occur, how very reasonable that we should give her the aid afforded by this agent! The system, worn and wearied by disease, and the blood impoverished, need support and repair; and food, suited to the powers of digestion and wants of the system is, above all others, the remedial means suggested alike by science and common sense. If the position sought to be established by Dr. Chambers be correct, there can be no question of the propriety of food at the very inception of disease. It is this:† "That disease is, in all cases, not a *positive existence*, but a *negation;* not a *new access of action* but a deficiency; not a *manifestation of life*, but partial death; and therefore that the business of the physician is, directly or indirectly, not to *take away* material, but to add; not to *diminish function*, but to give it play; not to *weaken* life, but to renew life."

* North Carolina Medical Journal, October, 1860.

† Renewal of Life.

I beg leave to quote a few extracts from a paper on "Alimentation in Disease," by Prof. Austin Flint, Sr.,* read before the "Medical Society of the County of New York," January 6th, 1868.

Says he: "Certain it is that diseases, which do not compromise directly the function of either the heart or lungs, can not kill so long as the nutrition of the body is maintained at a point compatible with life. Starvation, associated with disease, may be inevitable; that is, the disease may involve an insuperable obstacle to either the ingestion or aliment, or its assimilation. Then it is that, in the language of Chossat, inanition may reach its termination sooner than the disease. On the other hand — and here is a fact full of practical import — starvation may not be a necessary effect of the existing disease, but may be due to insufficient alimentation. In such cases, inanition may prove a cause of death when the disease need not have destroyed life; the patient, indeed, may die of starvation, notwithstanding the progress of the disease *per se* be favorable. Then, in the language of Chossat, inanition 'reaches its natural termination later than the disease which it covertly accompanies, and it may supersede the disease of which, at first, it was merely an incidental element.'" * * * * * "In acute diseases the failure of the vital powers is forestalled in proportion as nutritive supplies are assimilated. This is simply saying that the assimilation of nourishment is indispensable for the preservation of the powers of life. And then, in the progress of an acute disease, more or less failure of the vital powers ensues, the more nutrition can be maintained, the more efficient the support." He further says that "Convalescence is protracted by the continuance of a liquid diet, and by an insufficient alimentation." Professors Barker, Jacobi and Noyes,† stated that their experience corroborated Dr. Flint's views, and Dr. Jacobi said that 'in children starvation is a very common

* New York Medical Journal, February, 1868.

† New York Medical Gazette, January 11th, 1868.

cause of death, rather than the disease from which they are suffering.'"

In the "*American Journal of Medical Sciences*," for January of this year, in an article written by him on "Inflammation, its Nature and Purposes," Dr. Jackson, in speaking of pneumonia, says: "Where the constitution of the patient is good, little more is required than to watch the course of the disease; the inflammation will take care of itself. It is the patient himself who is to be carefully looked to; his forces, which are to carry him through the conflict, are to be judiciously sustained, and all disturbing causes, moral and physical, guarded against. In cases of pneumonia, and where the antiphlogistic treatment had been fully carried out, convalescence is difficult and protracted. I have known two deaths to occur evidently from exhaustion. A limited portion of a lung had been the seat of disease, and was nearly restored to its natural state, and yet death took place with the disease extinct. Prof. G. B. Wood says there is reason to believe that in pneumonia, patients have been starved."

At the opening of the medical session at University College, London, October 1, 1867, Prof. Grailly Hewett delivered the introductory address on "Nutrition, the Basis of the Treatment of Disease." I will make from it a few quotations bearing directly on this subject. "But do we adequately recognize it as a fundamental principle in the treatment of disease that food is the most powerful of remedies? * * * The prescription may be otherwise faultless, its different ingredients balanced to a nicety, but the life itself must be supported and sustained, and this can not be done without food.

"* * * * With some few exceptions, death is always preceded by exhaustion. The natural forces of the body become weakened in some way or other; another step downwards, and the body ceases to live. Its mechanism is some times so disturbed or disarranged, that resuscitation is in no way possible; but the mechanism being intact, the restorative power of food is great to an almost incredible extent. Nature

herself frequently suggests the remedy, calls loudly for food, and will not be denied. The indication is then plain enough. But where exhaustion is great, appetite gone, consciousness itself, perhaps, well nigh extinct; it is under these circumstances that a knowledge of the extraordinary remedial action of nourishment is of vital importance. To place within the alimentary tube some thing which it may easily take up, and which the body may, with what little power is still left to it, convert into new force — to do this at the right moment, and in the right way, is often an exercise of consummate skill and ability. The body is enabled thus to retain its hold on life. The deadly coldness gives place to genial warmth, the flickering pulse becomes steady, the light anew sparkles in the eye; for a time, at all events, the bitterness of death has passed."

Dr. Jackson once told me he thought there ought to be a professorship of the culinary art in every medical college, and that if physicians studied less about drugs, and more about alimentation, and the proper preparation of food for the sick, the result would tell decidedly for good upon their patients. Gentlemen, there is truth in this! How often are patients terribly drugged for diseases which could have been speedily cured simply by the observance of hygienic or dietic rules?

The late lamented Velpeau frequently remarked in his lectures that more than half the people who got sick thought they must have medicine to get well; and what is worse, as great a proportion of doctors think so too. I think it was Schonlein who said: "Good physicians often see no indication for treatment, bad ones never."

I conceive it to be our duty never to give medicine when it can possibly be dispensed with; and when needed, we should not give such as, by lowering vital power, will materially interfere with nature's curative processes. I would not have you think me a disbeliever in the propriety and efficacy of medicines timely and properly administered, but secondary in importance are they to food and hygienic laws.

Dr. John Clark, in a single hospital, saved more than six teen thousand children's lives by ventilation. What drugs could have done this? Just think, gentlemen, of the remedies that from time to time have been prescribed in typhus and typhoid fever!

In the lecture already referred to, Dr. Thomas tells us that a few years ago the Commissioners of Public Charities in New York, assured by the physicians of Bellevue Hospital, that pure air and nourishment were the proper remedies for these diseases, entrusted their management to Dr. A. L. Loomis of that city (the patients being placed in tents on an island in East River), and he thus writes to Dr. Thomas concerning them: "I have had charge of the typhus fever cases for five months; during this time not a particle of medicine and no stimulants have been employed, and the results have been one death in every sixteen and two-third cases; while, as you are aware, the percentage under the old plan was one in six. Dr. Murchison, a late English writer, states them in England as one in five. Medicine has never been able to do this. I mention these facts not to show the inutility of drugs, but the far greater importance of hygienic laws."

While the importance of ventilation is admitted by all, it is seldom properly practiced, and not unfrequently altogether neglected.

In regard to alcoholic stimulants, they are always indicated when there is failure of the powers of life, and may some times be given very largely to great advantage. Numerous authors relate cases that show their great value, and some in which very large quantities were given with decided benefit to the patient. I once gave an adult patient, with a severe and very extensive double-pleuro-pneumonia, very nearly a quart of whisky every twenty-four hours, for two weeks. During the whole of this time very little food was given, owing to the inability of the patient to retain it. Perfect recovery occurred, but in consequence of the previous bad health of the patient, and the extent of the disease, it was slow and protracted.

But, gentlemen, (lamentable is it to know!) there are those who, either ignorant of, or disregarding the golden truths and facts of Modern Medicine, cling to tradition and views long since utterly exploded, and vaunt the success of a practice opposed to physiology and pathology — yes, it seems to me, to common sense. I refer to the so-called antiphlogistic treatment, which originated long "ere modern physiology rent the veil of therapeutical empiricism," and the fatality of which is leading daily to its abandonment. This practice has no basis but tradition and empiricism. Scientific practice must have physiology for its basis. In the language of George Harley:* "A knowledge of organization, important though it be, is yet less indispensable to the physician than a knowledge of healthy function, for it is the latter which elucidates the dark problems of life, it is the latter which proves the golden key to the comprehension of disease." And says Chambers:† "Is it not then obvious that the only sure mode of arriving at a knowledge of the deficiencies of vital powers, or diseases, is by a knowledge of those powers of which they are deficiencies? The physiologist is the only true pathologist." And in part I, of Todd, Bowman and Beale's "Physiological Anatomy and Physiology of Man" the latter says: "Pathology is the physiology of disease; and, it is obvious, that no pathological doctrines can command confidence, which are not founded upon accurate views of the *natural* functions. It is also certain that improvements in pathology must follow in the wake of an advancing physiology."

Just here I will quote a little passage from Habershon on "The Injurious Effects of Mercury." Says he: "Any remedy that has been supposed to possess properties by which this so-called inflammation could be checked, has received the name antiphlogistic, and mercury stands foremost amongst them; but water or brandy often fulfill a similar purpose, and many agents possess equal power in this respect. This phraseology is a vestige of days of ignorance, and has only hypothesis to

* Harley on Jaundice. † Op. Cit.

rest upon. In medicine, however, we still retain the antiphlogistic remedy; and too often diseases are considered as conditions requiring to be smothered out, unfortunately also by frequently extinguishing the patient."

But let us examine more particularly into this subject, and see how irrational such a practice is. At the present day I am sure there could be found no bleeders like Clutterbuck, Rush, or Dewees, yet there are those who believe in the *curative* agency of the abstraction of blood by venesection. Its mechanical effects for good, no one will deny; yet, even here, Dr. Chambers tells us that the loss of this "liquid flesh" must be immediately compensated for by the administration of nutritive food; but it is indeed difficult to understand how venesection can exercise a *curative* effect upon the part inflamed. The attempt to cut short an inflammation by a large bleeding, early resorted to, is now so little practiced that I will not speak of it.

The question naturally arises, can general blood-letting diminish the amount of blood in the part inflamed? Yet this is not always necessary, as in pneumonia, where the cure is effected by cell-growth, to accomplish which an increased amount of blood is necessary. In inflammation, in consequence of injury to the *vaso-motor* nerves of the part, the vessels lose their contractile power, and become distended with blood, and stasis, owing to adhesiveness of the corpuscles, occurs, followed by exudation. No one pretends to say that general blood-letting can directly diminish the amount of blood in the part inflamed in external inflammation, and why should it in internal? It can only be done by such a large loss as would materially and alarmingly weaken the force of the heart, and then not more would probably be taken from the inflamed part than would be by the application of a single leech to an external inflammation, and all this time the inflammatory process goes on unaffected by the loss of blood. In the language of Markham, "Venesection is not a remedy for inflammations, but for the accidents of certain of them." In a word, it acts mechanically, and in this way may sometimes prove beneficial.

In pneumonia it is the custom with not a few to abstract blood locally by cups and leeches, when the anatomist shows that there is no direct anastomosis between the surface-vessels and those of the inflamed part. Hence it is plain that cupping or leeching the foot or back of the neck would do as well, so far as the loss of blood is concerned. Local depletion can only be beneficial where there is direct vascular connection between the surface from which blood is drawn and the part inflamed. When this does not exist, the good effected by such means is only through reflex action upon the vaso-motor nerves of the part.

Those who do bleed on antiphlogistic principles, do not do so to the extent practiced by their predecessors, and the majority of them are generally ready to assign as the reason for this, that these diseases have changed their type — that we are at present on an adynamic, asthenic tide — and patients can not bear the same losses of blood now as formerly. In this view some moderns agree with them. If this be so, it is passing strange that this change from strong to weak should have occurred nearly all over Europe and this country about the same time. The surgeon now-a-days does not say this about external inflammations; and if his patient should die from loss of blood, or a woman from excessive flooding after labor, he does not in the one case, nor the accoucheur in the other, invoke the change-of-type theory as a cause. And when large bleedings are now practiced, the same fatality occurs as formerly.

Mercury is not so lavishly given now in these diseases as in the past, yet by some it is not administered with a *very* sparing hand. Why is not the change-of-type theory invoked as a reason for this? But, gentlemen, it is not my purpose to discuss this subject; the real and true cause, however, of our change in practice is a better knowledge of these diseases, resulting from advance in pathology and improved methods of diagnosis.

But within the past few years there seems to be an abate-

ment of their sanguinary propensity in those even who bleed on purely antiphlogistic principles in acute inflammation, and they have betaken themselves to other remedies scarcely less powerful for evil. I refer to *Mercury* and *Tartar emetic*. Let us inquire into the action of these agents, particularly the former, and see if they produce a condition favorable to the object in view, and are sanctioned by the authority of those who have had the best opportunities of testing their merits.

"Mercury," says Headland,* (accepting the experiments of Wright,) "by some destructive agency, deprives the blood of one-third of its fibrin, one-seventh of its albumen, one-sixth or more of its globules, and at the same time loads it with a fœtid matter, the product of decomposition. Such power is possessed by few other medicines, and certainly exerted by none in the same degree as mercury. It is an agent of terrible activity, and we may well be cautious how we handle it. Mercury wastes the frame, causes the body to become thin and feeble, the face pallid, and diminishes the nervous energy." And Habershon says:† "After mercury has been taken for some time, the general nutrition of the body is impaired, the blood becomes darker, the coagulation of its fibrine less firm, and the proportionate quantity of serum increased, the red corpuscles are diminished, and the patient becomes thin and blanched. His tissues lose their proper tone, his muscles become flaccid, his energy diminished, and his nervous system enfeebled." And while admitting that serous effusions and abnormal deposits sometimes become absorbed under its influence, he further says "there is ample proof that the same can be effected by less injurious means, and that it sometimes happens that the diseased product becomes more abundant in quantity and less organized in character from the enfeebled nutritive action consequent on the mercury." He also says in acute pleuritis, pericarditis or peritonitis, it is the ordinary practice to give calomel so as to affect the gums, but that the

* Action of Medicines.

† Injurious effects of Mercury.

disease often subsides without any mercury, and very frequently the effusion steadily increases during salivation. He states that he has seen cardiac disease consequent upon rheumatism come on while the system is under the influence of mercury.

Tanner, in his work on the Practice of Medicine, says: "With regard to the use of mercury, there appears to be every reason to believe that its utility in controlling inflammation, or in promoting absorption of the effused products, has been very much overrated; and indeed it seems highly probable that inflammatory diseases will progress more favorably without the use of this medicine than with it."

The cases of pericarditis published in the London *Lancet* about twenty years ago, treated by Dr. John Taylor, without mercury, show the undeserved reputation this medicine has had in this disease, and subsequent observations by others confirm his results.

Dr. Todd says:* "No one would now venture to assert that mercurial influence, however quickly induced, ever checked pericarditis or pleurisy; nor would it be easy to adduce an instance in which, with any reasonable degree of certainty, it could be stated that mercury broke down adhesions, or prevented their occurrence."

Dr. Garrod, whose views are entitled to great respect, in treating of rheumatism, says:† "For many years I was in the constant habit of administering calomel in cases in which inflammation of the heart was present, but for the last eight or ten years, I have not done so as frequently, and have seen no reason to regret the change of practice; the cardiac inflammation appears to have yielded quite as readily, and the patient, on the subsidence of the fever, has not had to suffer from ptyalism in addition to debility."

One single case of rheumatic fever‡ in which pericarditis came on while the patient was salivated and proved fatal, seems to have caused Dr. Chambers to discontinue its use in

* Injurious effects of Mercury.
† Reynolds' System of Medicine, vol. 1.
‡ Op. Cit.

this disease, and in pneumonia he says that antimony and mercury, "pure destructives," "merely abet the worst effects of the disease."

Prof. Bennett and a great number of other modern scientific physicians, as strongly condemn this destructive agent as those from whom I have quoted. So small a proportion does the good bear to the ill effected by the administration of this drug in these diseases, that it would doubtless be better for the human race if its use in them could be entirely interdicted. Perhaps it may some times be used to advantage, but the deleterious results which follow its misuse, to be so frequently seen to, are enough to make the conscientious physician look, with a scrutinizing eye, for its real virtues. No remedy is more generally abused. In the malarial sections of this State, few persons can be found who, for a slight attack even of fever, do not think a dose of calomel or blue mass indispensable to "set the liver right," as they say, when quinine alone, or sometimes, perhaps, aided by some mild and gentle means, would be amply sufficient to effect the cure. The prostrating effects of such a course, aided by low diet, renders them prone to renewed attacks, which generally follow, and the autumn finds them weak, feeble and anæmic, and their blood loaded with black pigment. Should their vocation cause them to be much exposed in inclement weather, acute disease, probably pneumonia, attacks them, and the grim Messenger frequently sent to end their existence, doubtless thanks mercury for its timely and efficient aid in his work of destruction.

But I am digressing. I must pass on to my subject, and shall say a few words only in regard to *Tartar emetic.*

As a depressant, to lower the force of the heart, in the early stage of acute inflammation, this drug, though much less than formerly, is still prescribed after the plan of Rasori and Lænnac, though in not so large doses, not only by the adherents of antiphlogistic principles, but by some modern practitioners. The best success ever gained in the treatment of these affections has been by well-directed and persistent

efforts to *sustain* rather than depress the heart's action, and the total avoidance of depressing agents. Why depress the heart's action when it has been already done by the disease? And besides, the nausea occasioned by this remedy prevents the administration of food. Dr. Flint, in the paper from which I have already quoted, says: "Medicines not infrequently impair the appetite and interfere with digestion. If not required for a special curative effect, they are then likely to do harm by compromising, more or less, alimentation and nutrition." When, in the early stage of these affections, pain and dyspnœa imperatively demand relief, and the functions of the heart and lungs are seriously impeded, small bleedings from the arm may be practiced on mechanical principles, and when these are not admissible from fear of ulterior ill-effects, *Antimony* would not be a proper remedy. It is one of those destructive agents which Chambers calls, with mercury, in pneumonia, a poison, and we can not be too careful in its administration. Even Headland, who seems very partial to both antimony and mercury, says:* "Antimony deteriorates and impoverishes the blood in very much the same way as mercury."

Veratrum viride, a powerful cardiac depressant, is used by many for the same object as antimony; yet I am disposed to think that the effect produced by such agents is antagonistic to the principles of treatment pointed out by a correct pathology.

A few months ago I treated a child eight years old with a severe pneumonia—saw it twenty hours after the inception of the disease. At my first visit the pulse was 140, and respiration 70 to the minute. The treatment consisted in local warmth, an average of three pints of milk, one a half pints of rich soup with little alcoholic stimulus every twenty-four hours. No medicines were given except anodynes and diuretics. On the sixth day the child sat up by the fire, and on the tenth was dressed and walking about the house. I am sure this result would not have been accomplished by an

* Reynolds' system of Medicine, vol. 1.

antiphlogistic treatment—by depressing the little patient still more than had been done by the disease.

Let us bear in mind that there are no foreign forces to be attacked, nor is there an excess of vitality, but a deficiency of the powers which naturally reside in the organism. Indeed it may be that the cause of the attack which demands our aid is an already deficient vitality. I am every day more and more convinced that a recognition and observance of these important facts must form the basis of successful practice. Rather than being too intent on driving out the enemy, let us busy ourselves, as Dr. Bennett says, to secure the safety of the fortress — let us try to bring the individual *up* to his physiological status. In a word, let us help him to restore his *natural* powers. This support can only be given by food. As Dr. Hewett says: "Nutrition is the basis of the treatment of disease, and no other is possible for a rational system of medicine."

In the preface to his admirable little brochure on Hysteria, Mr. Skey says: "A weak condition of the animal body is intelligible enough, but an abnormal condition warranting a reduction of vital power by artificial agency I can not understand." Let us construct and support, not destroy and weaken.

The experiments of Hering and others show that in pathological increase of the heart's action, the rapidity of the general circulation is generally diminished. And M.M. Estor and St. Pierre have shown that the venous blood returning from an inflamed part is of a brighter color than ordinary venous blood, showing *suboxidation*. These facts certainly do not call for depressing agents in the treatment of inflammation. On the contrary they show diminished life. And besides, the general condition of the patient strongly indicates a lowered vitality. The least exertion frequently can not be borne even at the very inception of disease, and that which would be prejudicial to the normal life would very seriously affect the pathological state.

How different the practice we condemn from the one we adopt — the Restorative and Eliminative. Modern medicine teaches us that these affections can not be cut short, and that while we aid nature by the most nutritive food, and alcoholic stimulants when necessary, to bring about most important changes, we, at the same time, give such remedies as will assist in the removal of effete products by the emunctories. I refer, of course, to diuretics and diaphoretics. Rest in bed and support are necessary from the first; local warmth, local depletion, and blisters, sometimes, are most important remedies. Expectorants, so frequently given in pneumonia, are not generally called for, as the exudation-matter is in very great part removed in other ways; and, too, they frequently cause nausea, and thus offer an obstacle to alimentation. Cathartics, of course, are some times needed.

This practice is sneeringly denounced by some as "expectant." In reply to this I will quote the closing paragraph to Dr. Chambers' article on pneumonia, in his "Renewal of Life." "Doing nothing or leaving the patient to himself, would indeed be dishonest; but do we do so? Is it doing nothing to keep up constant relays of poultices night and day for a week or ten days? Is the enforcement of continuous nutrition no labor? Is there no anxiety and thought spent in hourly watching the need of variation in our doses of opium and wine for serious cases? Is the moistening warming the air to an even temperature not enough to occupy our time? Is it so much easier to support the waning life than to weaken it, that the former should be condemned as idleness, the latter praised as activity? If the pneumonia patient were left to himself, would he — could he — adopt any of the means suitable for his recovery? Would he not very likely be taking colocynth, senna, calomel, antimony, ipecacuanha, salines, senega, squill, hydrocyanic acid, colchicum, be rubbing in mercury, applying mustard poultices, and blisters, be bled "*coup sur coup*," or have brandy every half hour? Is it nothing to stand sentry against the fatal seductions of polypharmacy?"

This treatment, gentlemen, simple as it may seem, and indeed really is, is practiced by almost all modern scientific physicians, and they tell us its success far transcends every other. In addition to the actual saving of life, convalescence is very rapid after the disease subsides.

It is our duty to shake off the shackles of tradition, if they fetter us, and walk in the light of *to-day*. It is no easy task to get men to confess that they have been practicing error, and to adopt a treatment contrary to the teachings of their early years; yet in an incomplete and advancing science like ours, the physiologist, histologist and pathologist are constantly furnishing us new facts upon which to build a more successful practice.

PHILADELPHIA CORRESPONDENCE.

PHILADELPHIA, *Oct.* 19*th*, 1868.

Editor CHICAGO MEDICAL JOURNAL:

As in other branches of medicine and surgery, improvements, constant and important, have been rapidly made, so in the treatment of *uterine* diseases, both its surgical and its medical departments have progressed and improved most astonishingly. Whereas, not many years ago, all uterine diseases were placed under the head of "spine diseases," or "inward complaints," and the patients were drugged and dosed, and left in a condition worse than their previous one, and it was only now and then that a speculum, or a vaginal or uterine examination, even by touch, was thought of. How widely different is it now! A medical man's library is incomplete without the modern works on this class of diseases. How the writings of Bennet and Linus, Bedford, Hewitt, and Simpson, and others, enhance the value of one's medical shelves now! Those who, like Buck, of whom I have before spoken, in that in which he has ever been a specialist—sur-

gery—are of high order and merit, but who, like him, have too contracted views of other special diseases to see their importance, and who, probably, have made but a very limited observation among these diseases, pronounce *all* who engage in this class of practice, "*enthusiasts*" and "*hobbyists!*" Heaven knows, the mothers and wives of this and every country, would be far better, had many of them placed themselves in the hands of *such enthusiasts* long ago. Take, for instance, that class of uterine disorders so common among women — ulceration of the os uteri. Pointed out by its universal and constitutional symptoms — pain in lumbo-sacral region, constipated bowels generally, pain on top of head, etc.; a class of symptoms formerly, and even now, far too commonly calling in aid revulsives of all characters, and *alteratives;*—how simple is its cure! Statistics are the best proofs of any matter. I find I have recorded in my notes, the histories of one hundred and ninety-one cases of ulcerated os uteri. These, I have gathered from clinical and private practice. Many of them, indeed, the larger number, were those of a tedious, chronic character, the subjects having suffered for a period of years, and many of them having been under *constant* use of medicine internally. Of these, *every one was cured* by local interference. In one hundred and two cases, *Arg. nit.* was used; in forty cases, Monsell's solution was applied; in twenty-three, *Sulphate of Copper;* and in the remaining fourteen, *Tinc. Iodine.* The number of visits ranged from two to sixteen in each case, these being the minimum and maximum number. Is not this array of facts *alone* enough to induce practitioners more generally to adopt these means of cure?

Take, again, the subject of inflamed uteri—a disease pointed out by constitutional symptoms similar to the above, together with continued constipated bowels. An examination *per vagina* will reveal an angry, red uterus, hypertrophied, not unfrequently, to a very great extent. Among my notes, I have the history of ninety-seven cases of this character, of a duration ranging from three months, to a period not less than

fifteen years. Some of the subjects are absolute burdens to themselves. Of these, eighty-three were *completely cured;* while the remaining fourteen were more or less relieved. The treatment was by means of *Arg. nit.*, *Caustic Potassa*, and sponge-tents. And in discussing this portion of my subject, I shall close this letter.

In the treatment of this form of uterine disease, the cure is very commonly attained by the first-named drug, *Arg. nit.;* but the objection is very properly advanced that it is slow in its action, and this objection is a valid one. I find, while the same patients would not object to taking medicine internally, from month to month, they object decidedly to being operated on for a long time; and the use of *Nitrate of Silver* necessitates this, often, though a deep and large eschar is made on one or both lips of the uterus. To remedy the difficulty, *Caustic Potassa* has been used; and this has a very decided objection, in its great escharotic power. I have used this drug in two cases well adapted for its use, and in both cases have been disappointed. The result, though *sooner* gained than by the use of *Arg. Nit.* is not of enough increased proportionate value to reward one for the great pains required in its use. Its corrosive effect is so decided and rapid, that it requires the most careful attention, with the liberal use of *Acetic acid*, and no little time. The third and last means I have mentioned, I can not commend in too high terms. I have, prior to this letter, cited several cases illustrative of its value, and I hope ere long to publish a monogram, giving concisely, and yet fully, the histories of the numerous cases which have fallen under my notice, as affording indubitable evidence of the value of the tent as a means of cure. A sponge tent, suitable for every purpose, is readily made by any physician, and can easily be formed into various sizes. I have seen it used (in my own and clinical practice) in sixty-four cases of hypertrophied uteri, and have yet to see a single case where it fails in its use. It seems to melt down a hypertrophy at times almost like magic. A tent is introduced through the internal os, up the entire uterine canal, and

allowed to remain twenty-four hours. It is then removed, and a larger one introduced, and it will rarely happen that the hypertrophy is not decidedly decreased by the forty-eighth hour. These tents, to be sure, are not without their evil effects. Like *Calomel*, they produce serious mischief some times. Acute metritis will occasionally, but rarely, follow. If it is necessary to use a disinfectant, the tent can readily be medicated by *Per-manganate of potash* or *Carbolic acid.* I shall resume this subject in my next. Yours,

E. R. HUTCHINS.

EDITORIAL.

Apologetic.

THE EDITOR begs pardon of the readers of the JOURNAL for having recently referred to a semi (or more) quack institution and its "organ" in the city of Cincinnati. At the time the paragraphs referred to were written, he supposed each to have a certain amount of respectability. Recent developments have shown that neither is possessed of this desirable quality.

This reminds us of an anecdote we heard many years ago from the lips of the Rev. Lyman Beecher, the father of all the Beechers. It was in the quaint, old-fashioned town of Middlebury, Vermont, before a college literary society with which we were then connected. The old gentleman, in paternal style, was advising us to weigh well the character of an antagonist before we engaged in a controversy with him. "Once upon a time," said he, "I was walking along the road in the evening with an old black letter volume under my arm, the contents of which I had, just before, been carefully conning. A few steps in front of me I saw a little black and white animal crossing the way. Without a moment's reflection I hurled the whole quarto volume at him, and —*got teh worst of the bargain!*"

The editor regrets exceedingly that a few weeks since he did not happen to recollect the moral conveyed in Dr. Beecher's entertaining experience. We promise not to defile our pages with any more of the odor of the *Cincinnati Medical Repertory*.

Gettysburg Katalysine Water.

Our attention has been called to the general interest on the subject of Mineral Spring Waters, and while we do not accept the many extravagant statements of interested parties respecting the medicinal value of these newly discovered springs, we regard the subject as eminently worthy the attention of medical men, aside from the claims put forth by those actuated mainly by pecuniary motives. There is ample evidence given upon high professional authority, of the demonstrated curative powers known to exist in many of the mineral waters in this country, and a great number in different places on the continent of Europe.

These latter have, in some instances, such as the Baden Baden, Vichy, and others, as well as our own Saratoga Springs, attained a reputation by long continued use and application to many diseases not always as successfully treated by medicines artificially compounded according to the best theories and practice known to the profession.

We should do injustice to the real claims of these natural fountains of healing waters, if we omit to say that our conviction is, that much of the prevalent ignorance on this subject among even the most scientific men in the medical profession, is the result of a prejudice on account of the empirical modes adopted to influence the purchase and sale of mineral waters.

In these remarks, we wish to be understood as referring only to *natural waters*, in distinction from artificial waters manufactured, as is pretended, by formulæ derived from analyses of natural springs. Such productions are, at best, a mere approximation to the original, and the best writers do not admit the possibility of any artificial combination which

can exhibit the demonstrated therapeutic agency which resides in the natural combination, since the most delicate chemical tests fail to detect the subtle elements which are the real secret of the peculiar success not unfrequently attained by the intelligent and proper application of mineral waters.

Statements which come to us on good authority, respecting the medicinal properties of the Gettysburg Katalysine Water, as shown by many and repeated trials, seem clearly to indicate that this Water possesses remarkable curative powers, especially in cases of uric and lithic acid conditions, resulting in rheumatism, gout, and diseases of the renal apparatus generally, and its effects in these cases, as well as in dyspepsia and general prostration of the vital powers of the system, are such as to claim the attention of those whose complaints, as above, indicate its application as a remedy. While this Water is almost tasteless, like ordinary spring water, its effects, in cases of irritation of the kidneys and bladder, extending through the urethra, and even chronic affections of this nature, frequently yield by the use only of a gill of the Water at a time, and this three times a day. The discharges become less acrid, and the incipient calculi and uric formations are rapidly solved, and pass off in quantities according to the accumulations present.

All that the proprietors of this Water ask or claim, is the use of the Water, daily, as above suggested, for a sufficient length of time to control the acid tendency, and thereby restore the mucous surfaces to their normal condition, meanwhile, it is stated, the superior curative powers of the Water will be demonstrated to the satisfaction of both invalid and physician.

It appears a fortunate peculiarity that from its peculiar composition, this Water is unaffected by climate or exposure.

As we learn that many of the medical profession are testing the Water in this city, we shall be pleased to hear more of its effects in treatment generally.

A variety of editorial matter, items, etc., unavoidably crowded out of the present number.